FCC 9-1-1 Briefing
Location Technology

September 27, 2007

Agenda

- Location Technology – Next Generation
  - Public Safety Location Requirements
  - Convergence Impacts On E9-1-1
  - Timing: 5 – 7 Year Plan
- Enterprise IP/PBX - MLTS
- Q & A

Timing: 5 – 7 Year Plan

Data Element	Responsibility	1St Milestone (2 Years)	2nd Milestone (5 Years)	Full Deployment
Call Back # or Equivalent	Carrier	100%	100%	NA
End User Name	Carrier	30%	100%	NA
Service Provider Name/NENA ID	Carrier	100%	100%	NA
Dispatchable Address: Address of Importance	Carrier	40%	100%	
Type of Location	Carrier	100%	100%	NA
Dispatchable Address: Dynamically Defined	PSAP	NA	70%	7 Years
Type of Address	Carrier	100%	100%	NA
Wireless Base-station address	Carrier	100%	100%	NA
XY & Uncertainty XY& Z & Uncertainty	Carrier Carrier	70% 5%	95% 80%	NA NA

X/Y/Z is NOT Enough

- We still need Addresses
  - In a fixed address location, it is better to dispatch to an address than an X/Y/Z
- X/Y/Z location technologies can assist in validating addresses and provide valuable secondary data.
- Reverse Geo-Coding is not the answer for the foreseeable future.
  - Without highly accurate base maps, reverse Geo-coding often produces misleading or imaginary locations.
- X/Y/Z enables E9-1-1 mobility in the outdoor use case.
- The Z axis is much more difficult to accurately determine than X/Y

New Technologies Blurring the lines between Fixed and Mobile Today

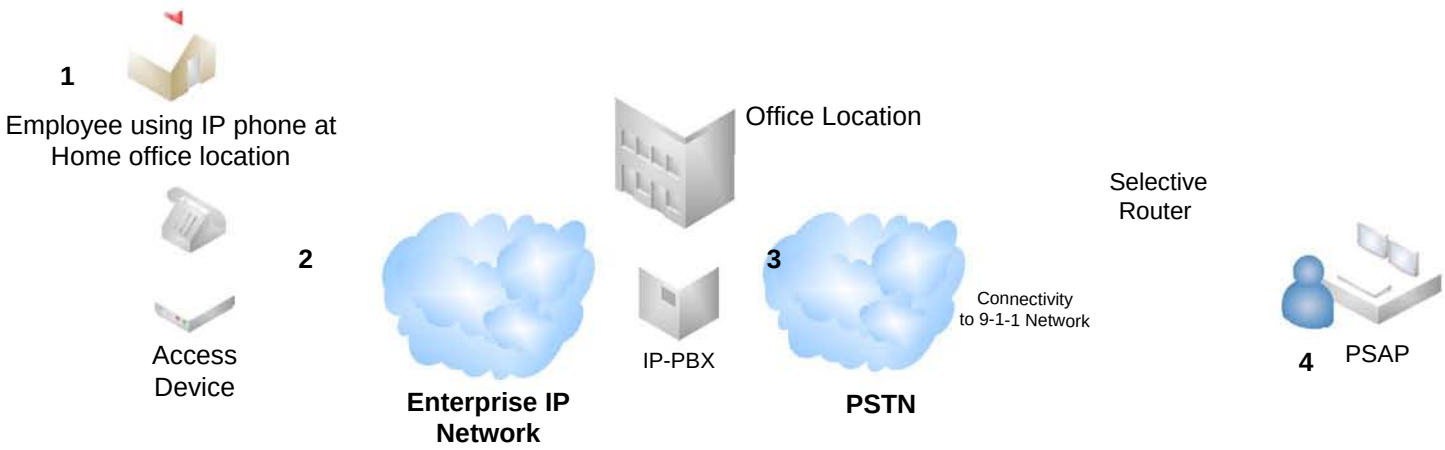
- UMA
  - Special GSM phones utilize internet based WiFi access points to place calls that are seamlessly integrated with Macro GSM system
    - Network has ability to recognize separate access points that could be associated with an MSAG address that could be passed to the PSAP.
    - Radius often around 100’
- Femptocell
  - Standard Cellular phones access special customer provisioned cells using the customers broadband access as backhaul to the carrier
    - Most Femptocells determine X/Y for standard operations.
    - Radius often around 100’

Enterprise IP/PBX - Existing Rule Summary

- Only 15 States have State Laws or PUC rules
  - Alaska
  - Virginia
- Lack of clear guidelines – business, residential, multi tenant
- No Consistent Mandates
- Numerous loopholes
- FCC Rule Impacts
  - Dockets 94-102; 05-196; 07-114
  - Need FCC Leadership and Clarification

E911 in a Current IP-PBX environment: Home office location

Current Situation: Example #1 – Employee working at home location



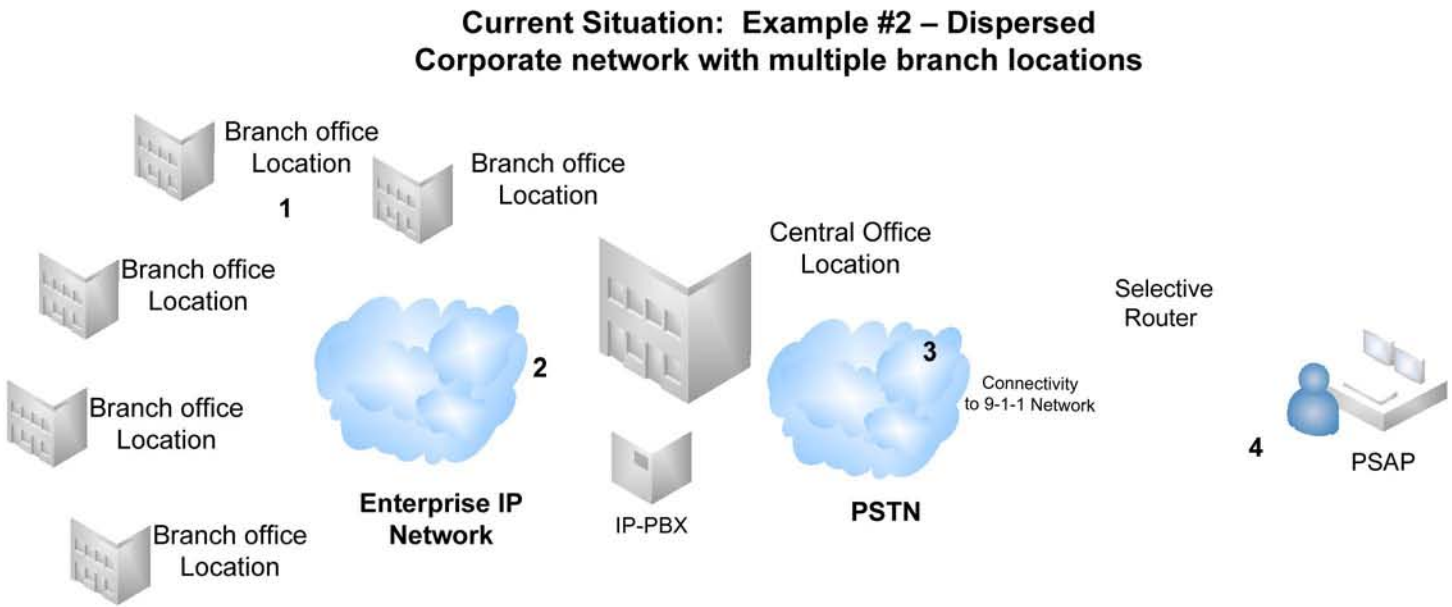
1 **Employee uses company assigned IP phone at home location (Home location is not in the same area as the office location and is served by different PSAP)**

2 **Employee uses IP phone to access corporate network in order to make voice calls (including 911)**

3 **IP-PBX connects to PSTN to terminate the call**

4 **In the case of a 9-1-1 call, the PSAP routing is based on the office location, not the location of the caller, therefore emergency response is directed to the wrong location**

E911 in a Current IP-PBX environment: Dispersed branch office locations



1 **Widely dispersed branch offices are connected to a central/regional IP-PBX for voice/data (each branch location removes local trunking to reduce cost)**

2 **All voice calls (including 911) that originate at a branch location are routed to the central IP-PBX**

3 **IP-PBX connects to PSTN to terminate the call**

4 **In the case of a 9-1-1 call, the PSAP routing is based on the Central office location, not the location of the caller at a branch office, therefore emergency response is directed to the wrong location**